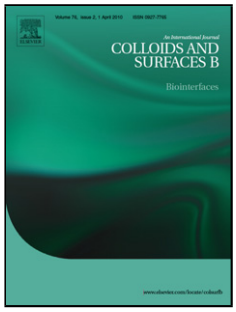
Accepted Manuscript



Title: Release Behavior and Signaling Effect of Vitamin D3 in Layered Double Hydroxides-Hydroxyapatite/Gelatin Bone Tissue Engineering Scaffold: An *In Vitro* Evaluation

Authors: Fateme Fayyazbakhsh, Mehran Solati-Hashjin, Abbas Keshtkar, Mohammad Ali Shokrgozar, Mohammad Mehdi Dehghan, Bagher Larijani

PII: S0927-7765(17)30416-2
DOI: http://dx.doi.org/doi:10.1016/j.colsurfb.2017.07.004
Reference: COLSUB 8667

To appear in: *Colloids and Surfaces B: Biointerfaces*

Received date: 16-2-2017
Revised date: 13-6-2017
Accepted date: 2-7-2017

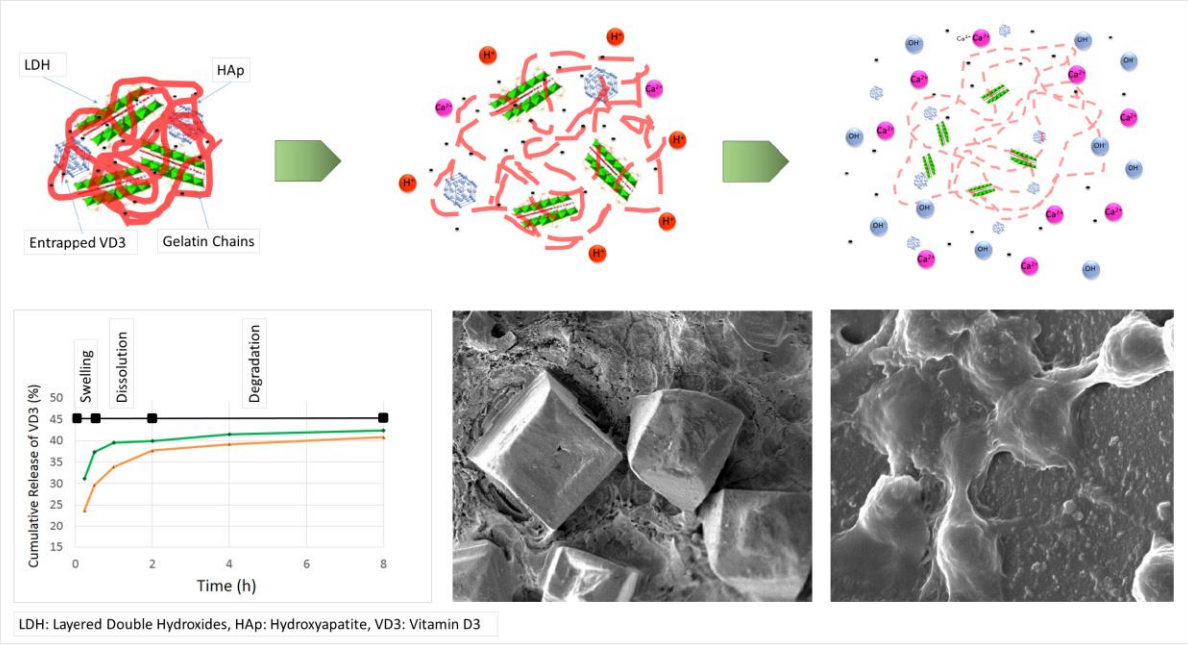
Please cite this article as: Fateme Fayyazbakhsh, Mehran Solati-Hashjin, Abbas Keshtkar, Mohammad Ali Shokrgozar, Mohammad Mehdi Dehghan, Bagher Larijani, Release Behavior and Signaling Effect of Vitamin D3 in Layered Double Hydroxides-Hydroxyapatite/Gelatin Bone Tissue Engineering Scaffold: An In Vitro Evaluation, Colloids and Surfaces B: Biointerfaceshttp://dx.doi.org/10.1016/j.colsurfb.2017.07.004

Release Behavior and Signaling Effect of Vitamin D3 in Layered Double Hydroxides-Hydroxyapatite/Gelatin Bone Tissue Engineering Scaffold: An *In Vitro* Evaluation

Fateme Fayyazbakhsh[1], Mehran Solati-Hashjin[1,2*], Abbas Keshtkar[3]
Mohammad Ali Shokrgozar[4], Mohammad Mehdi Dehghan[5], Bagher Larijani[6]

1 Biomedical Engineering Faculty, Amirkabir University of Technology, Tehran, Iran
2 Biomaterials Center of Excellence, Amirkabir University of Technology, Tehran, Iran
3 Department of Health Sciences Education Development, School of Public Health, Tehran University of Medical Sciences, Tehran, Iran
4 National Cell Bank of Iran, Pasteur Institute of Iran, Tehran, Iran
5 Department of Surgery and Radiology, Faculty of Veterinary Medicine, University of Tehran, Tehran, Iran
6 Endocrinology and Metabolism Research Center, Endocrinology and Metabolism Clinical Sciences Institute, Tehran University of Medical Sciences, Tehran, Iran
*Corresponding Author Tel: +98 (21) 64545679 Fax: +98 (21) 66468186
Email: solati@aut.ac.ir

Graphical abstract



The VD3 controlled release was obtained after adding the nanoparticles into the gelatin matrix that improved the biomineralization and cellular response.